

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

YOU ME PATENT AND LAW FIRM

Seolim Bldg., 649-10, Yoksam-dong, Kangnam-ku, Seoul  
135-080, Republic of Korea

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 19 MARCH 2005 (19.03.2005)

Applicant's or agent's file reference  
OPP040373KR

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2004/003444

International filing date (day/month/year)

24 DECEMBER 2004 (24.12.2004)

Priority date(day/month/year)

26 DECEMBER 2003 (26.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC7 H04B 7/26

Applicant

Electronics and Telecommunications Research Institute et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

SHIN, Jun Ho

Telephone No. 82-42-481-8129



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/003444

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/003444

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1 - 21	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1 - 21	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1 - 21	YES
	Claims	NONE	NO

**2. Citations and explanations :**

**1. NOVELTY AND INVENTIVE STEP**

Reference is made to the following documents:

D1 : US 6622251 B1 ( TELEFONAKTIEBOLAGET LM ERICSSON ) 16 September 2003

D2 : Carla-Fabiana Chiasserini ; Ramesh R. Rao,; "Improving energy saving in wireless systems by using dynamic power management" ; Wireless Communications, IEEE Transactions on , Volume: 2 , Issue: 5 , September 2003, Pages 1090-1100

The present invention discloses a method for arranging and grouping listening-intervals of plural subscriber terminals by determining the sleep-mode starting time of the subscriber terminal which requests entering a sleep-mode, according to a initial-sleep window, a final-sleep window, and a subscriber terminal identifier which are derived from the sleep-request message.

On the other hand, D1 discloses a method to put a mobile terminal into a sleep mode. In D1, An access point (AP) organizes mobile terminals (MTs) within its cell into different sleep groups which wake up at a different time. The group can have the same or different time duration, but awaken at different times so that they are not in phase. The sleep start time can be in the form of an offset, for example a number of MAC frames after the current MAC frame. (D1, column 3 line 65 to column 4 line 55) D2 discloses a group-based wakeup schemes wherein communication nodes are grouped into different sevice classes depending on their battery status and QoS (quality of service) requirements on packet delay (D2. page 1092, right-hand column)

So, the prior arts including D1 and D2 do not disclose the subject matter of the present invention. Even though the prior arts may be combined, it is not obvious to a skilled person in a broadband wireless access communication system to derive the subject matter of present invention from the prior arts.

Therefore, the subject matter of claims 1-21 is considered to have novelty and an inventive step.

**2. INDUSTRIAL APPLICABILITY**

The subject matter of claims 1-21 is considered to have an industrial applicability under PCT Article 33(4).